

PATENT CLAIMS

1. An ignition coil for an internal combustion engine with a primary winding (1) supporting substantially cylindrical primary coil base (2), a low voltage connection area (10) for the connection of the primary winding (1) to a low voltage, a secondary winding (3) that is inductively coupled with the primary winding (1) and that is positioned on a substantially cylindrical secondary coil base (4) to provide a high voltage for a spark plug of the internal combustion engine, wherein primary coil base (2) and secondary coil base (4) are concentrically positioned relative to one another, and a high voltage connection area (5), in which the secondary winding (3) contacts the spark plug, wherein an electrically conductive, substantially cylinder formed layer (16) with mechanical dampening properties is located within an annular space defined by the outermost winding of the two windings (1, 3), characterized in that the electrically conductive layer (16) is formed as a sandwich structure comprising at least two partial layers (16a, 16b) with a therebetween lying intermediate layer (17) with mechanical dampening characteristics.
2. An ignition coil for an internal combustion engine in accordance with claim 1, characterized in that the electrically conductive layer (16) is located in an annular space located between the primary winding (1) and the secondary winding (3), which surrounds the innermost winding of the two windings (1, 3).
3. An ignition coil for an internal combustion engine in accordance with claim 1 or 2, characterized in that the electrically conductive layer (16) surrounds a magnetic core (6) disposed within the innermost winding of the two windings (1, 3).

4. An ignition coil for an internal combustion engine in accordance with one of the previous claims, characterized in that at least one of the partial layers is formed as a foil (16).

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5. An ignition coil for an internal combustion engine in accordance with one of the previous claims, characterized in that the intermediate layer (17) is electrically conductive.

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6. An ignition coil for an internal combustion engine in accordance with claim 5, characterized in that the electrically conductive intermediate layer (17) is electrically coupled with the ground of the ignition coil.

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7. An ignition coil for an internal combustion engine in accordance with one of the previous claims, characterized in that the electrically conductive layer (16) includes a slot (18) running in the lengthwise direction of the ignition coil.

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8. An ignition coil for an internal combustion engine in accordance with one of the claims 4 through 7, characterized in that the foil includes an arrangement of openings at regular intervals, in particular in the form of a lattice net.

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9. An ignition coil for an internal combustion engine in accordance with one of the previous claims, characterized in that the electrically conductive layer (16) is roll formed from a flat material, such that an overlapping of the material occurs at the adjoinment area.

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10. An ignition coil for an internal combustion engine in accordance with one of the previous claims,

characterized in that the contact of the electrically conductive layer (16) with one of the two windings (1, 3) is achieved through a separate contact means, in particular a supply lead, which the layer (16) and the corresponding winding (1, 3) enclose.

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11. An ignition coil for an internal combustion engine in accordance with one of claims 1 through 9,

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characterized in that the contact of the electrically conductive layer (16) with one of the two windings (1, 3) is achieved through direct contact of a conductive portion of the layer (16) with an un-insulated portion of the corresponding winding (1, 3).